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**REMARKS**

1. Claims 2-67 and 69 are pending in the present application.
2. In the Office Action Summary, the Examiner states that claims 2-67 and 69 are withdrawn from consideration. However, claims 2-67 and 69 are pending in the application, not withdrawn. Correction is respectfully requested.
3. The Applicant thanks the Examiner for withdrawing the finality of the previous action.
4. The Applicant notes that the Examiner has performed a new search, even if the amendments made by Applicant in the previous response were minor and for clarification purposes only. The Examiner is respectfully reminded that piecemeal examination and undue multiplication of references should be avoided as much as possible. MPEP 707.07(g).
5. In section 3 of the Action, the Examiner rejects claims 2, 3, 18, 19 and 34-36 under 35 USC 102(b) as being anticipated by U.S. Pat. No. 6,124,813 to Robertson. The Applicant respectfully disagrees.

*Claim 1 recites "a control arrangement to switch the switching element between the first condition and the second condition, wherein the control arrangement comprises analog processing elements."*

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Figure 7 of Robertson shows a control arrangement consisting of elements X1, X2 and X3. X1 and X2 are XOR gates, X3 is a flip-flop. Therefore, X1, X2 and X3 are digital processing elements, not analog processing elements.

Further, the Examiner notes that inputs INA, INB to gates X1 and X2 originate from a flash A/D converter (element 131 in Figure 14) which comprises analog elements. However, element 131 is not part of the control arrangement. The control arrangement in Robertson –see Figure 7 mentioned by the Examiner– has inputs INA, INB (after leaving flash A/D converter element 131) and CLK and output 26. The elements processing those inputs are digital processing elements X1, X2 and X3, as already pointed out above. With all due respect, the Examiner cannot backtrack the transformations occurring to signals INA and INB prior to entering the control arrangement in Robertson to conclude that the control arrangement comprises analog processing elements.

Therefore, the Applicant submits that claim 2 is novel over Robertson, together with claims 3, 18 and 19, at least by virtue of their dependency on claim 2.

Claim 34 recites “a clocking arrangement to pipeline the first input and the second input.”

According to the Examiner, Robertson discloses a clocking arrangement CLK to pipeline input INA and INB. To justify this assertion, the Examiner makes reference to Figure 6 of Robertson which, according to the Examiner, discloses multiple pipelines of the input digital signals. The Applicant respectfully disagrees.

Pipelining of a signal involves delaying a signal, as explained in the definition taken from the website dictionary.com enclosed with Applicant's previous

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response to an earlier Official Action, and as also explained, for example, in paragraph [0051] of the application as filed. With reference to Figure 6 of Robertson indicated by the Examiner, where is this delay shown? Figure 6 of Robertson only shows sets of interconnected swapper cells without any mention to "pipelining" or delay. To the contrary, Robertson expressly avoids delay. See, for example, column 9, lines 23-24 (propagation through the swapper cell is not delayed by logic elements). See also column 7, line 25 through column 8, line 4 which clearly teach against any use of elements to delay the inputs to the swapping circuits.

Therefore, claim 34 is novel over Robertson, together with claims 35 and 36 by virtue of their dependency on claim 34.

6. In section 4 of the Action, the Examiner rejects claims 41-47 under 35 USC 102(e) as being anticipated by U.S. Pat. No. 6,614,377 to Adams. The Applicant respectfully disagrees.

*"Claim 41 recites "a tuning arrangement to adjust a frequency spectrum of DAC errors, thus shaping the DAC errors away from a frequency band."*

According to the Examiner, element 152 of Figure 13 of Adams, in conjunction with Figures 14A-14D of Adams, discloses a tuning arrangement. The Applicant respectfully but strongly disagrees. The arrangement disclosed in Adams can only switch between an unshaped error spectrum (if the arrangement is turned off) and a shaped error spectrum (when Adams' elements are operational). However, this arrangement is not a tuning arrangement, because the shaping in Adams is fixed and defined by Adams' hardware. Each time a different shaping is desired, Adams' hardware configuration (like, for example, the number N of the rotating steps in rotator 152) has to be modified. Adams' disclosure could

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never be used to obtain the results shown, by way of example and not of limitation, in Figures 16 and 24A-24C of the present application. Therefore, the type of control described in Adams is static because of its hardware dependency and because it does not constitute a *"tuning arrangement to adjust a frequency spectrum of DAC errors"* as recited in claim 41.

Therefore, claim 41 is novel over Adams, together with claims 42-47, by virtue of their dependency on claim 41.

7. In section 6 of the Action, the Examiner rejects claim 69 under 35 USC 103(a) as being unpatentable over Adams in view of U.S. Pat. No. 6,873,280 to Robinson. The Applicant respectfully disagrees.

Claim 69 recites *"pro viding a . . . circuit having a first circuit output and a second circuit output; . . . connecting the first circuit output with [a] first DAC input and the second circuit output with [a] second DAC input . . . ; subtracting [a] second DAC output from [a] first DAC output to provide a difference output."*

With reference to Adams, the Examiner states that signals OUT A and OUT B of Figure 4 represent the *"first circuit output"* and *"second circuit output"* and that elements 232 of Figure 13 represent the *"first DAC"* and *"second DAC."* However, when trying to show that Adams also discloses *"conn ecting the first circuit output with the first DAC input and the second circuit output with the second DAC input,"* the Examiner makes reference to element 234 of Figure 13. However, element 234 of Figure 13 of Adams only shows a sum of DAC outputs and not the claimed feature. Therefore, clarification is respectfully requested. In particular, where is Adams showing that OUT A and OUT B are connected to the input of DACs 232 of Figure 13? With all due respect, the Applicant submits that

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the Examiner is using claim 69 as a roadmap instead of trying to find exact correspondence of the claimed features in Adams.

Further, with reference to Robinson, Applicant notes that although Figure 6 of Robinson shows a subtraction 232 between DAC 210 and DAC 226, circuit 206 has only a single output 208 connected to DAC 210.

Moreover, the Applicant respectfully disagrees with the motivation to combine Adams with Robinson stated by the Examiner. While Applicant agrees that both Adams (Figure 13) and Robinson (Figure 6) disclose multiple DACs, this is not enough to define a motivation for the person skilled in the art to combine their teachings. Subtracting DAC outputs gives an entirely different spectrum than summing DAC outputs. By summing DAC outputs –as taught in Adams– the person skilled in the art obtains what is hopefully a faithful analog representation of a digital word fed into the DAC. On the other hand, by subtracting the DAC outputs, the person skilled in the art obtains a completely different result, i.e. the spectrum of the DAC mismatch error and not a representation of a digital word being fed into the DAC. The Examiner cannot use presence of a sum (+) between signals as a motivation for the person skilled in the art to look for a subtraction (-) among those signals. In doing so, the Examiner has applied impermissible hindsight.

Therefore, the Applicant submit that the Examiner has not made a prima facie 35 USC 103(a) case against claim 69 and that claim 69 is patentable over Adams and Robinson.

8. In section 7 of the Action, the Examiner objects to claims 37-40 and states that they would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Applicant notes

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that claims 37-40 all depend, directly or indirectly, on independent claim 34 which is deemed to be patentable, as shown above by Applicant. Therefore, the Applicant respectfully submits that rewriting of claims 37-40 is not needed.

9. In section 8 of the Action, the Examiner allows claims 4-17, 20-33, 48-52 and 53-67. The Applicant thanks the Examiner for the indication of allowability.

\* \* \*

In view of the above, reconsideration and allowance of all the claims are respectfully solicited.

The Commissioner is authorized to charge any additional fees, which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, then the Commissioner is authorized to treat

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this response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, fax no. (571) 273-8300 on

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Susan Papp  
(Name of Person Transmitting)

Susan Papp  
(Signature)

11/17/05  
(Date)

Respectfully submitted,

Alessandro Steinf  
Alessandro Steinf  
Attorney for the Applicant  
Reg. No. 56, 448  
LADAS & PARRY  
5670 Wilshire Boulevard,  
Suite 2100  
Los Angeles, California 90036  
(323) 934-2300 voice  
(323) 934-0202 facsimile  
asteinfl@ladas.com